

# NASA TECH BRIEF



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## Absolute Focus Lock for Microscopes

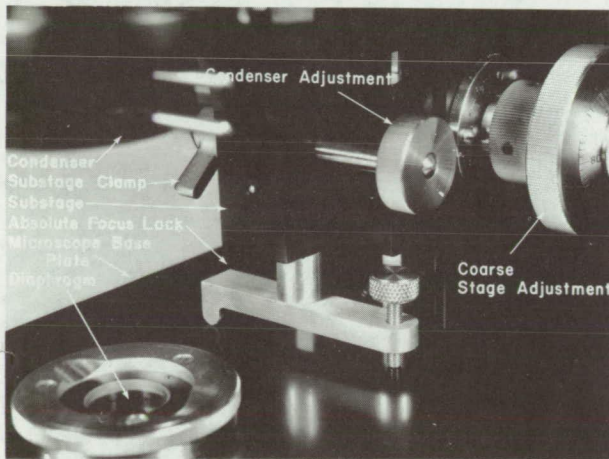


Figure 1.

### The problem:

The absolute focus of conventional microscopes cannot be maintained over very long periods of time without frequent attention. The position stability of the stage, and hence the focus of the microscope, is dependent solely upon the static friction of the fine focus adjustment rack and pinion. Over extended periods, the weight of the stage causes it to creep downward, and focus is lost.

### The solution:

A simple mechanism absolutely immobilizes the stage at a desired preset focus (Fig. 1), thus preserving focus indefinitely.

### How it's done:

The absolute focus lock (Fig. 2) is a second-class lever consisting of a straight body having a fulcrum with a cylindrical bearing surface at one end and a thumbscrew at the other end. On the upper

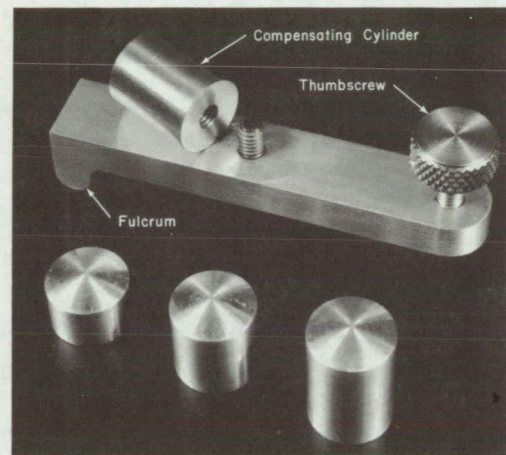


Figure 2.

face of the lever a threaded stud provides for mounting cylinders of appropriate lengths to compensate for differences in objectives.

After the microscope has been properly focused, the absolute focus lock, with a compensating cylinder of suitable length attached, is placed beneath the microscope stage. The thumbscrew is then adjusted, raising the compensating cylinder until it contacts the stage assembly. This relieves the fine focus adjustment assembly of the weight of the stage. The focus of the microscope is thus absolutely fixed, and can be maintained for long periods of time.

### Note:

No additional documentation is available. Specific questions, however, may be directed to:

Technology Utilization Officer  
Langley Research Center  
Hampton, Virginia 23365  
Reference: B70-10728

(continued overleaf)

**Patent status:**

Inquiries about obtaining rights for the commercial use of this invention may be made to:

Patent Counsel  
Mail Code 173  
Langley Research Center  
Langley Station  
Hampton, Virginia 23365

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